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Appl. No. 09/243,101
Amdt. dated September 6, 2005
Reply to Final Office Action of June 6, 2005

REMARKS

Claims 59 to 150 were pending in the application at the time of final examination. Claims 59 to 61, 63 to 69, 71 to 79, 81 to 87, 89 to 95, 97, 99 to 101, 103 to 115, 117 to 129, 131 to 143, and 145 to 150 stand rejected as anticipated. Claims 62, 70, 80, 88, 98, 102, 116, 130, and 144 stand rejected as obvious.

Claims 69, 87, 109, and 137 stand rejected for informalities. Applicants have amended Claims 69 and 87 as suggested by the Examiner. However, in Claims 109 and 137, there is no prior recitation related to execution and so Applicants respectfully submit that the suggested change would create an informality rather correct an informality. Applicants respectfully request reconsideration and withdrawal of the objection to each of Claims 69, 87, 109, and 137.

Applicants respectfully request entry of the amendments to the claims. The amendments were not early presented because the objection that necessitated the amendments was raised for the first time in the final office action. Entry of these amendments will not require consideration of new issues or a new search and will place the application in condition for allowance. Accordingly, entry of the amendments is appropriate under Rule 116.

Claims 59 to 61, 63 to 69, 71 to 79, 81 to 87, 89 to 95, 97, 99 to 101, 103 to 115, 117 to 129, 131 to 143, and 145 to 150 remain rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,308,317, hereinafter referred to as Wilkinson.

Applicants respectfully traverse the anticipation rejection of each of independent Claims 59, 77, 95, and 123. Applicants further respectfully submit that the rejection has failed to establish a proper basis for an anticipation rejection and has used an improper claim interpretation.

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In maintaining the rejection, the Examiner stated in part:

The claim is not clarifying about how this data being inlined is formed or represented. . . . when the instruction being referenced from a constant pool . . . is being transformed into data embedded in a same linear space that a previous opcode/operand occupied, i.e., inlining.

Applicants respectfully note that Claim 59 recited in part:

. . . .at least one reference of at least one of said instructions to a constant pool

Thus, Claim 59 recites "at least one reference . . . to a constant pool." Claim 59 also recites that the "reference . . . a constant pool" belongs to "at least one of said instructions." Claim 59 does not recite "the instruction being referenced from a constant pool" which was the invention rejection, as quoted above. This is a first demonstration that an improper claim interpretation has been made.

Claim 59 continues by reciting what the conversion does, i.e.,

. . . .transforming at least one reference . . .
to data

and then Claim 59 states explicitly what is done with the data from the transformation, the data is

. . . inlined directly in at least one operand or opcode.

Claim 59 also recites that the "at least one operand or opcode" belongs to "said at least one of said instructions."

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Thus, a reading of the plain meaning of Claim 59 and nothing more teaches that a reference to a constant pool in an instruction is converted into data inlined in an operand or opcode of that instruction. Consequently, the conversion of the reference to the constant pool by the instruction eliminates the reference because the reference has been converted to inlined data. Again, this is not reading anything into the claim, it is based on the plain meaning of Claim 59.

In response to Applicants pointing out this fact in the prior response, the rejection stated "eliminates the need to reference the constant pool . . . amount to mere perception from Applicants understanding . . .but do not constitute a weight in light of what has been explicitly claimed."

(Emphasis Added) This is but a further demonstration that an improper level of claim analysis has been performed. What has been explicitly claimed is in fact what was pointed out previously, as explained above.

The plain meaning of Claim 59 must be considered in view of the MPEP requirements. The MPEP directs:

Office personnel must first determine the scope of a claim by thoroughly analyzing the language of the claim before determining if the claim complies with each statutory requirement for patentability. (Emphasis in original.)

MPEP § 2106 C., 8th Ed., Rev. 2, p 2100-7, (May 2004). A thorough analysis of the language of the claim was just presented and shows that the rejection failed to comply with this requirement and in fact asserted facts that directly contradict this requirement of the MPEP.

The erroneous level of analysis was justified in the rejection with the following statement:

With broad and reasonable interpretation, the claim has been treated, interpreted such that the arguments from above would be mere allegations . . .

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While the prior response did not go into the detail given above, pointing the result of the plain meaning of the claim language has been characterized as "mere allegations," which is but a further demonstration of an improper level of analysis. If the Examiner should allege that using the plain meaning is inappropriate, Applicants note that while the examiner is permitted to interpret claim limitations broadly, the MPEP puts specific bounds on such an interpretation. Specifically,

**CLAIMS MUST BE GIVEN THEIR BROADEST REASONABLE
INTERPRETATION**

During patent examination, the pending claims must be "given *>their< broadest reasonable interpretation consistent with the specification."

MPEP § 2111 8th Ed. Rev. 2, p 2100-46 (May 2004).

The broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach.

MPEP § 2111 8th Ed. Rev. 2, p 2100-47 (May 2004).

**>Claim terms are presumed to have the ordinary and customary meanings attributed to them by those of ordinary skill in the art.

MPEP § 2111.01, II., 8th Ed. Rev. 2, p 2100-48 (May 2004).

Thus, Applicants respectfully submit that the interpretation of Claim 59 in the rejection is neither related to Applicants' claim language nor related to the interpretation that would be used by those of skill in the art. In fact the rationale for maintaining the rejection is clear evidence that the above quoted MPEP requirements were not followed.

Next, the MPEP has very specific requirements for an anticipation rejection, which have not been met in the rejection. Specifically, the MPEP requires:

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TO ANTICIPATE A CLAIM, THE REFERENCE MUST TEACH EVERY ELEMENT OF THE CLAIM

... "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, i.e., identity of terminology is not required. In *re Bond*, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

MPEP § 2131, 8th Ed. Rev. 2, p. 2100-73, (May 2004).

Applicants respectfully note that while the reasons for maintaining the rejection based on Wilkinson cited "a same linear space," this was not supported by any citation to Wilkinson. This is because Wilkinson does use either the term "inlining" or "linear space." To the extent that the rejection asserts such a teaching, the rejection mischaracterizes Wilkinson, as discussed more completely below. Definitions and terms have been used in the rejection, which are not based on the reference. The rejection of Claim 59 combines unrelated parts of Wilkinson, each will be discussed in turn. Col. 10, lines 30 to 47 or Wilkinson stated:

Once the jumps are recorded, if the optional byte code translation is not being performed 62, the card class file converter 26 may proceed to the third pass 64.

Otherwise, the card class file converter converts specific byte codes into generic byte codes. Typically, the translated byte codes are not interpreted in the Card JVM 16 but are supported by converting the byte codes into equivalent byte codes that can be interpreted by the Card JVM 16 (see FIG. 7). The byte codes 70 may be replaced with another semantically equivalent but different byte codes 72. This generally entails the translation of short single specific byte codes such as ILOAD_0 into their more general versions. For example, ILOAD_0 may be replaced by byte code ILOAD with an argument 0. This translation is done to reduce the number of byte codes translated by the Card JVM 16, consequently reducing the complexity and code space requirements for the Card JVM 16.

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Thus, Wilkinson taught replacing byte code ILOAD_0 with byte code ILOAD with an argument of zero. Attached are pages 252 and 253 of Lindholm and Yellin, The Java™ Virtual Machine Specification, Sun Microsystems, Inc., Santa Clara, California, 1997. Applicants point out that in an anticipation rejection the MPEP directs that a second reference can be used to "(B) Explain the meaning of a term used in the primary reference;" MPEP § 2131.01, 8th Ed., Rev. 2, p. 2100-74 (May 2004). The attached pages teach:

iload

Operation

Load int from local variable

iload
index

Forms

iload = 21 (0x15)

Stack

... ⇒

..., value

Description The index is an unsigned byte that must be a valid index into the local variables of the current frame (§3.6). The local variable at index must contain an int. The value of the local variable at index is pushed onto the operand stack. (Emphasis Added)

and

iload_<n>

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Operation Load int from local variable

Format

`iload <n>`

Forms `load_0 = 26 (0x1a)`
 `iload_1 = 27 (0x1b)`
 `iload_2 = 28 (0x1c)`
 `iload_3 = 29 (0x1d)`

Stack `... =>`
 `..., value`

Description The <n> must be a valid index into the local variables of the current frame (§3.6). The local variable at <n> must contain an int. The value of the local variable at <n> is pushed onto the operand stack. (Emphasis Added)

In view of this information, the translation of Wilkinson teaches that one byte code is changed to a different byte code, but the index is maintained in both byte codes. Accordingly, one of skill in the art in reading this part of Wilkinson would not obtain any teaching about transforming a reference to a constant pool, as recited in Claim 59. In fact, since the index is maintained in both byte codes, the cited section of Wilkinson teaches away from such a transformation.

Further, Wilkinson taught that the reason for byte code translations was:

This translation is done to reduce the number of byte codes translated by the Card JVM 16, consequently reducing the complexity and code space requirements for the Card JVM 16. (Emphasis Added)

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Wilkinson, Col. 10, lines 44 to 47. Thus, contrary to the interpretation in the rejection, the purpose of the operation cited in Col. 10 was to reduce the number of byte codes and had nothing to do with eliminating a reference to a constant pool, and in fact as demonstrated above, the translation faithfully maintained the index to the local variable of the current frame.

The rejection combines this teaching of translating byte codes to reduce the number of byte codes with Fig. 9 that is directed to rebuilding constant pool entries, e.g., two different operations as defined by Wilkinson. Specifically, Wilkinson taught:

In the third pass 64, the card class file converter rebuilds constant references via elimination of the strings used to denote these constants. . . . In this pass the card class file converter 26 modifies the operands to all the byte codes that refer to entries in the Java class file constant pool 42 to reflect their new location in the card class file constant pool 47. FIG. 9 shows an example wherein the argument to a byte code, INVOKESTATIC 90, refers to an entry in the Java class file constant pool 42 that is modified to reflect the new location of that entry in the card class file constant pool 47. The modified operand 94 shows this transformation. (Emphasis Added)

Wilkinson, Col. 10, lines 52 to 65.

Thus, the rejection combines translating byte codes with modifying operands that refer to entries in the JAVA class file constant pool. Again, the reference teaches away from eliminating the reference with inlined data as recited in Claim 59 by teaching that a new value of the reference must be found. Thus, Wilkinson not only fails to teach anything about eliminating a reference to a constant pool but also teaches that it is necessary to maintain a reference.

In each instance, the information that the rejection cited in Wilkinson maintains either an index or a reference and so

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fails to teach the invention to the same level of detail as recited in Claim 59. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 59.

Claims 60, 62, and 63 to 68 depend from Claim 59 and so distinguish over Wilkinson for at least the same reasons as Claim 59. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 60, 62, and 63 to 68.

Claim 69 stands rejected as anticipated by Wilkinson also. The reasons for maintaining the rejection in part was:

The rejection has also put forth that the making of such composite ILOAD is not just basic LOAD instruction as alleged by Applicants, it is a forming of the parts which lead to a composite form, such form to be again decomposed later at execution in the Java Card environment. The very nature of a composite form like ILOAD_x entails more than one instruction would be needed to implement its execution; otherwise Wilkinson would not go through the pain of providing the composing of this particular form .

This statement confuses the direction of operations of Wilkinson, why Wilkinson performs the operations, and Applicants' claim language. First, Wilkinson taught that instructions like ILOAD_x were translated so that it was not necessary to execute such instructions in the Java Card environment. Thus, any comments on implementing ILOAD_x in the Java Card environment mischaracterizes the reference.

As noted above in the portions of pages 252 and 253 of Lindholm and Yellin, The Java™ Virtual Machine Specification, Sun Microsystems, Inc., Santa Clara, California, 1997, both ILOAD_x and ILOAD are single instructions and comments about either being a composite instruction as recited in Claim 69 is not based upon any citation in Wilkinson and goes against the

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knowledge of those of skill in the art as established by The Java Virtual Machine Specification, as quoted above.

Moreover, conjecture about why Wilkinson may or may not have done something, i.e., "otherwise Wilkinson would not go through the pain", cannot form any basis for an anticipation rejection. The MPEP is specific that the rejection must be based upon teaching from the reference, as quoted above and incorporated herein by reference.

Wilkinson expressly taught why the ILOAD_X instruction was translated to an ILOAD instruction, as was quoted above, i.e.,

This translation is done to reduce the number of byte codes translated by the Card JVM 16, consequently reducing the complexity and code space requirements for the Card JVM 16. (Emphasis Added)

Wilkinson, Col. 10, lines 44 to 47.

The reason for the "pain" as the rejection put it had nothing to do with forming a composite instruction, but rather was simply reducing the number of byte codes translated according to Wilkinson. Thus, the rationale for the rejection is inconsistent with the explicit teaching of Wilkinson.

The ILOAD_X instruction is an instruction for a single load operation as is the ILOAD instruction. This is expressly stated in The Java Virtual Machine Specification as quoted above. Accordingly, translating an ILOAD_X instruction to an ILOAD instruction, and executing the ILOAD instruction in the JAVA CARD environments results in a single load operation being performed. The comments to the contrary in the rationale for maintaining the rejection are contradictory to this evidence.

Again, the rationale for the rejection as quoted above confuses what is executed in the JAVA CARD environment of Wilkinson, the result of the execution, and why Wilkinson performed the translation. The execution of either of the load

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instructions fails to teach a composite instruction as recited in Claim 69, and in particular fails to teach

said instructions comprising at least one composite instruction for performing an operation on a current object, the execution of said at least one composite instruction being functionally equivalent to sequential execution of two or more other instructions

as recited in Claim 69. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 69.

Claims 71 to 76 depend from Claim 69 and so distinguish over Wilkinson for at least the same reasons as Claim 69. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 71 to 76.

Claim 77 is directed to a resource-constrained device that includes a conversion equivalent to that of Claim 59, as discussed above and incorporated herein by reference. Therefore, Claim 77 distinguishes over Wilkinson for at least the same reasons as Claim 59. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 77.

Claims 78, 79 and 81 to 86 depend from Claim 77 and so distinguish over Wilkinson for at least the same reasons as Claim 77. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 78, 79 and 81 to 86.

Claim 87 is directed to a resource-constrained device that includes a composite instruction equivalent to that of Claim 69, as discussed above and incorporated herein by reference. Therefore, Claim 87 distinguishes over Wilkinson for at least the same reasons as Claim 69. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 87.

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Claims 89 to 94 depend from Claim 87 and so distinguish over Wilkinson for at least the same reasons as Claim 87. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 89 to 94.

Claim 96 is directed to a method of using an application software program that includes a conversion equivalent to that of Claim 59, as discussed above and incorporated herein by reference. Therefore, Claim 96 distinguishes over Wilkinson for at least the same reasons as Claim 59. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 96.

Claims 97, 99 to 101, and 103 to 108 depend from Claim 96 and so distinguish over Wilkinson for at least the same reasons as Claim 96. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 97, 99 to 101, and 103 to 108.

Claim 109 is directed to a method of using an application software program that includes a composite instruction equivalent to that of Claim 69, as discussed above and incorporated herein by reference. Therefore, Claim 109 distinguishes over Wilkinson for at least the same reasons as Claim 69. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 109.

Claims 110 to 115, and 117 to 122 depend from Claim 109 and so distinguish over Wilkinson for at least the same reasons as Claim 109. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 110 to 115, and 117 to 122.

Claim 123 is directed to an apparatus that includes a conversion equivalent to that of Claim 59, as discussed above and incorporated herein by reference. Therefore, Claim 123 distinguishes over Wilkinson for at least the same reasons as Claim 59. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 123.

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Claims 124 to 129 and 131 to 136 depend from Claim 123 and so distinguish over Wilkinson for at least the same reasons as Claim 123. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 124 to 129 and 131 to 136.

Claim 137 is directed to an apparatus that includes a composite instruction equivalent to that of Claim 69, as discussed above and incorporated herein by reference. Therefore, Claim 137 distinguishes over Wilkinson for at least the same reasons as Claim 69. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of Claim 137.

Claims 138 to 143 and 145 to 150 depend from Claim 137 and so distinguish over Wilkinson for at least the same reasons as Claim 109. Applicants respectfully request reconsideration and withdrawal of the anticipation rejection of each of Claims 138 to 143 and 145 to 150.

Claims 67, 70, 80, 88, 96, 98, 102, 116, 130 and 144 stand rejected under 35 U.S.C. 103(a) over Wilkinson in view of official notice.

Applicants respectfully traverse the obviousness rejection of each of Claims 67, 70, 80, 88, 96, 98, 102, 116, 130 and 144. Assuming arguendo that use of Official Notice is appropriate, the additional information noted fails to correct the defects in Wilkinson as noted above for the independent claims for which these claims depend. Thus, each of Claims 67, 70, 80, 88, 96, 98, 102, 116, 130 and 144 distinguish over the combination of references for at least the same reasons as the independent claim from which each depends. Applicants request reconsideration and withdrawal of the obviousness rejection of each of each of Claims 67, 70, 80, 88, 96, 98, 102, 116, 130 and 144,

Claims 59 to 150 remain in the application. Claims 69 and 87 have been amended. Claims 1 to 58 were previously canceled.

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For the foregoing reasons, Applicant(s) respectfully request allowance of all pending claims. If the Examiner has any questions relating to the above, the Examiner is respectfully requested to telephone the undersigned Attorney for Applicant(s).

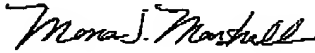
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Respectfully submitted,



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Mona J. Marshall

September 6, 2005
Date of Signature

*The JavaTM
Virtual Machine
Specification*

Tim Lindholm
Frank Yellin



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iload***iload***

Operation Load int from local variable

Format

<i>iload</i>
<i>index</i>

Forms *iload* = 21 (0x15)

Stack ... ⇒
... *value*

Description The *index* is an unsigned byte that must be a valid index into the local variables of the current frame (§3.6). The local variable at *index* must contain an int. The *value* of the local variable at *index* is pushed onto the operand stack.

Notes The *iload* opcode can be used in conjunction with the *wide* instruction to access a local variable using a two-byte unsigned index.

JAVA VIRTUAL MACHINE INSTRUCTION SET

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iload_<n>***iload_<n>*****Operation** Load int from local variable**Format**

<i>iload_<n></i>

Forms
iload_0 = 26 (0x1a)
iload_1 = 27 (0x1b)
iload_2 = 28 (0x1c)
iload_3 = 29 (0x1d)**Stack**
..., \Rightarrow
..., *value***Description** The *<n>* must be a valid index into the local variables of the current frame (§3.6). The local variable at *<n>* must contain an int. The *value* of the local variable at *<n>* is pushed onto the operand stack.**Notes** Each of the *iload_<n>* instructions is the same as *iload* with an *index* of *<n>*, except that the operand *<n>* is implicit.

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